

REMARKS

The application has been reviewed in light of the Office Action dated October 24, 2005. Claims 12, 14, 15, 17, 18, 20, 21 and 23-25 are pending, with claims 12, 14, 18, 20, 24 and 25 being in independent form. Claims 1-11, 13, 16, 19 and 22 were previously canceled, without prejudice or disclaimer. By this Amendment, claims 18 and 20 have been amended to correct informalities therein. In addition, claims 12 and 14 have been amended to clarify the claimed invention. Support for the claim amendments can be found in the application at, for example, page 10, lines 5-11, and page 12, lines 13-17, as originally found.

Claims 18 and 20 were objected to as having informalities therein.

By this Amendment, claims 18 and 20 have been amended to correct informalities therein.

Withdrawal of the objection to claims 18 and 20 is requested.

Claims 12, 14, 15 and 17 were rejected under 35 U.S.C. §103(a) as purportedly unpatentable over U.S. Patent No. 6,428,160 to Roy et al. in view of U.S. Patent No. 5,136,307 to Uchida et al. Claims 21 and 23 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Roy in view of Uchida and further in view of U.S. Patent No. 6,523,948 to Matsumoto et al.

Applicant has carefully considered the Office Action and the cited art, and respectfully submits that independent claims 12 and 14, as amended, are patentable over the cited art, for at least the following reasons.

This application relates to ink-jet recording in which heat is applied to a printed surface of a recording medium to make ink adhere to the printed surface. The application is directed to improvements which enable high-speed, high-definition and high-quality image recording.

Applicant devised improved ink-jet recording devices wherein a multi-nozzle recording

head (claim 12) or a head unit having a plurality of multi-nozzle recording heads (claim 14) has a plurality of nozzles arranged in a density in a range between 400 and 2400 dpi so as to cover the printing range of the recording medium. The heating unit extends along a direction along which the nozzles of the recording head are arranged. Also, the heating unit has a heating range, the width of which is wider than the width of a printing range of the recording medium. Each of independent claims 12 and 14 as amended includes these features.

Roy, as understood by Applicant, is directed to an ink-jet printing system wherein high-surface tension ink drops are deposited onto paper, and prior to ink penetration into the paper, the water in the droplet is evaporated while still resident on the paper surface.

Uchida, as understood by Applicant, is directed to an ink-jet recording apparatus adapted to maintain accuracy of delivery of recording sheet, by maintaining a constant distance between the nozzle surface of the recording head and the printed surface of the recording sheet, providing a carrier guide at the inside of the carrier belt to carry the recording sheet, and providing a roller at the entry and exit of the carrier belt of the carrier guide. Uchida was cited in the Office Action as purportedly proposing a recording medium conveying device which feeds a recording medium from a stack of sheets to a recording device.

However, Applicant does not find teaching or suggestion in Roy or Uchida of an ink-jet recording device having a multi-nozzle recording head (claim 12) or a head unit having a plurality of multi-nozzle recording heads (claim 14), wherein each multi-nozzle recording head has a plurality of nozzles arranged in a density in a range between 400 and 2400 dpi so as to cover the printing range of the recording medium.

Matsumoto, as understood by Applicant, is directed to an ink jet printer wherein plural nozzles are arranged in an ink jet head in an array in a main scan direction, and a thermal head

includes plural thermal elements arranged in an array in the main scan direction. Matsumoto was cited in the Office Action as purportedly disclosing an optical LED heater.

Applicant does not find disclosure or suggestion by the cited art, however, of an ink-jet recording device comprising a multi-nozzle recording head (claim 12) or a head unit having a plurality of multi-nozzle recording heads (claim 14), wherein each multi-nozzle recording head has a plurality of nozzles arranged in a density in a range between 400 and 2400 dpi so as to cover the printing range of the recording medium, as provided by the claimed invention of each of claims 12 and 14.

The Office Action indicates that claims 24 and 25 are allowed. The Office Action also stated that claims 18 and 20 were objected to as having informalities but would be allowable if rewritten to overcome the informalities.

Applicant appreciates the Examiner's statement in the Office Action of reasons for the indication of allowable subject matter and submits that the claims recite subject matter which further supports patentability for reasons in addition to those identified in the Examiner's statement of reasons for the indication of allowable subject matter.

In view of the amendments to the claims and remarks hereinabove, Applicant submits that the application is now in condition for allowance. Accordingly, Applicant earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Office is hereby authorized to charge any fees that may be required in connection with this response and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone conference could advance the prosecution of this application, the Examiner

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is respectfully requested to call the undersigned attorney.

Respectfully submitted,


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